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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/599,975

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EXAMINER

PATEL, RONAK C

ART UNIT

PAPER NUMBER

1794

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/599,975	<b>Applicant(s)</b> TARDIEU ET AL.	
	<b>Examiner</b> RONAK PATEL	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 44-66 is/are pending in the application.
- 4a) Of the above claim(s) 56-62 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 44-55 and 63-66 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20070321</u> .  | 6) <input type="checkbox"/> Other: ____.                          |

### DETAILED ACTION

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

2. **Group I, claim(s)** 44-55 and 63-66, drawn to a colored latex comprising a mixture of an uncolored initial latex and at least one initial aqueous dispersion of at least one pigment being under the form of particles, where the particles of the pigments are water insoluble and at least 90 or greater than 90% of the particles of one or more pigments has a particle size 370 nm or less.
3. **Group II, claim(s)** 56-62, drawn to a method for producing colored latex
4. A colored latex comprising a mixture of an uncolored initial latex and at least one initial aqueous dispersion of at least one pigment being under the form of particles, where the particles of the pigments are water insoluble and at least 90 or greater than 90% of the particles of one or more pigments has a particle size 370 nm or less is a common technical feature of Group I and II. However, Ogawa (US 5576088) discloses ink-jet recording sheet comprising a gloss providing layer (abstract), The gloss providing layer is formed from a coating composition composed mainly of pigment and a binder and in the gloss providing layer at least 70 parts by weight in 100 parts by weight of the pigment are constituted by colloidal particles such as silica or alumina and the colloidal particles are inorganic or organic particles which are suspended and dispersed in water, which makes it aqueous dispersion and have an average particle size of at most 300 nm, which means 300 nm or less (col. 8, lines 36-40, lines 52-60) Ogawa also discloses

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as the synthetic polymer latex to be used in the gloss providing layer includes methyl methacrylate-butadiene copolymer, an acrylic polymer latex such as a copolymer of any acrylic methacrylic acid ester (col. 11, lines 8-14. Ogawa also discloses silica alumina constitutes gloss providing layer in combination with other pigments in an amount of at least 5 parts by weight (col. 9, lines 43-48) Although there is no explicit disclosure that the pigment is water insoluble, it is well-known, as evidenced Hawley's Condensed Chemical Dictionary, that both silica and alumina are water in-soluble (page 44, 45, 995). Thus, a colored latex comprising a mixture of an uncolored initial latex and at least one initial aqueous dispersion of at least one pigment being under the form of particles, where the particles of the pigments are water insoluble and at least 90 or greater than 90% of the particles of one or more pigments has a particle size 370 nm or less is not a special technical feature and claims 44-66 fail to form a single general inventive concept. Therefore, unity of invention is lacking and restriction is proper.

5. During a telephone conversation with Mark Wilson on 01/29/2010 a provisional election was made without traverse to prosecute the invention of group I claims 44-55 and 63-66. Affirmation of this election must be made by applicant in replying to this Office action. Claims 56-62 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim

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remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

7. The examiner has required restriction between product and process claims.

Where applicant elects claims directed to the product, and the product claims are subsequently found allowable, withdrawn process claims that depend from or otherwise require all the limitations of the allowable product claim will be considered for rejoinder.

All claims directed to a nonelected process invention must require all the limitations of an allowable product claim for that process invention to be rejoined.

8. In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103 and 112. Until all claims to the elected product are found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowable product claim will not be rejoined. See MPEP § 821.04(b). Additionally, in order to retain the right to rejoinder in accordance with the above policy, applicant is advised that the process claims should be amended during prosecution to require the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.** Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

***Specification***

9. The abstract of the disclosure is objected to because Abstract is in two paragraphs. Correction is required. See MPEP § 608.01(b).

***Claim Rejections - 35 USC § 112***

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 54 and 63 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

12. Regarding claim 54 for Polyurethane “type” in line 1, The addition of the word “type” extends the scope of the claims so as to render them indefinite since it is unclear what “type” is intended to convey. The addition of the word “type” to the otherwise definite expression renders the definite expression indefinite by extending its scope. *Ex parte Copenhaver*, 109 USPQ 118 (Bd. App. 1955).

13. Regarding claim 63, the scope of the claim is confusing given that the claim refers to “colored latex layer” of claim 44, however, claim 44 is drawn to colored latex not colored latex layer.

***Claim Rejections - 35 USC § 102***

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. Claims 44, 45, 46, 47, 48, 50, 51, 53 and 55 are rejected under 35 U.S.C. 102(b) as being anticipated by Ogawa (US 5576088), further evidenced by Hawley's Condensed Chemical Dictionary, Tsao (US 6451379), and Liu et al. US (US 5989378).

15. Regarding claim 44, 45, 46, 47, 50, 51, 53 and 55 Ogawa discloses ink-jet recording sheet comprising a gloss providing layer (abstract). The gloss providing layer is formed from a coating composition composed mainly of pigment and a binder and in the gloss providing layer at least 70 parts by weight in 100 parts by weight of the pigment are constituted by colloidal particles such as silica or alumina where the colloidal particles are inorganic or organic particles which are suspended and dispersed in water, i.e. aqueous dispersion, wherein the particles have an average particle size of at most 300 nm, which means 300 nm or less (col. 8, lines 36-40, lines 52-60), which meets the limitation of claims 45-47, where 100% of the particles of the pigment are 300 nm or less and the binder used for the gloss providing layer is polymer latex having an average particle size of at most 100 nm or 100 nm or less and has a glass transition temperature of at most 30 C (col. 3, lines 63-67), preferably from -50 C to 30 C (col. 11, line 40-41) which meets the limitation of claims 53 and 55. Ogawa also discloses silica/alumina constitutes gloss providing layer in combination with other pigments in an amount of at least 5 parts by weight (col. 9, lines 43-48). Ogawa also discloses as the synthetic polymer latex to be used in the gloss providing layer includes methyl methacrylate-butadiene copolymer and an acrylic polymer latex such as a copolymer of any acrylic methacrylic acid ester (col. 11, lines 8-14) and also discloses that the amount of latex to be used is preferably from 2 to 30 parts by weight 100 parts by

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weight of pigment (col. 11, lines 22-24). Although, Ogawa does not expressly disclose the colored latex, but does disclose initial colored latex and a pigment. Thus, the initial uncolored latex and a pigment when they are mixed with each other, colored latex comprising uncolored latex and a pigment is formed. Although there is no explicit disclosure that the pigment is water insoluble, it is well-known, as evidenced by Hawley's Condensed Chemical Dictionary, that both silica and alumina are water insoluble (page 44, 45, 995).

16. Further, attention is drawn to example 24, col. 31, where colloidal silica that is Snowtex YL is used in the coating composition for the gloss providing layer. It is well known as evidenced by Tsao that Snowtex YL has particle size of 50-80 nm (col. 5, lines 20-23) and as evidenced by Liu that Snowtex YL has average particle size of 65 nm (col.26, lines 22-23).

17. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

18. Claims 44-51, 63-66 are rejected under 35 U.S.C. 102 (e) as being anticipated over Knox et al. (US 2005/0196626), further evidence by Hawley's Condensed Chemical Dictionary.



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19. Regarding claims 44-51, 63-66 Knox discloses a photochromic optical article comprising a rigid substrate and a photochromic organic polymeric coating (claim 1), where the photochromic organic polymeric coating is chosen from polyurethane based coating (claim 16) and inorganic particles, composite particles are also incorporated in to the photochromic polymer coating and such particles and an average particle size ranges from 5 to 50 nanometers prior to the incorporation into the composition (para 0083), which clearly suggests that the 100% of the particles have an average size 370 nm or less. The particles used in the photochromic polymeric coating is colloidal silica, which is aqueously dispersed, titanium oxide or mixtures thereof (para 0089) which acts as a pigment and also discloses that the particles will present in amounts less than 10 weight percent (para 0091), which meets the claim limitation that the pigment initial aqueous dispersion represent at most 10% by weight of claim 49. Knox also discloses colloidal silica particles are dispersed in water (para 0095). Knox discloses that the photochromic polymeric coating can be applied as water-borne coating as an aqueous polymer dispersion such as a latex (para 0159). Knox also discloses that the polychromatic polyurethane coating is specially preferred for use on transparent such as ophthalmic applications such as vision correcting lenses (para 0106-0109). Knox also discloses an embodiment where the photochromic articles such as ophthalmic lens, comprising a transparent organic plastic substrate and optically clear organic polymeric photochromic coating such as polyurethane based appended to atleast a portion of or atleast a surface of said plastic substrate (para 0017-0018). The photochromic coating applied to the surface of the plastic substrate will typically have a thickness of at least

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10 microns (para 0118) and non limiting examples of organic substrates that can be used as polymeric organic substrates are polyurethanes, polythiourethanes (para 0102-0103), which meets the limitation of claim 65. Although, Ogawa does not expressly disclose the colored latex, but does disclose initial colored latex and a pigment. Thus, the initial uncolored latex and a pigment when they are mixed with each other, colored latex comprising uncolored latex and a pigment is formed. Although there is no explicit disclosure that the pigment is water insoluble, it is well-known, as evidenced by Hawley's Condensed Chemical Dictionary that Silica is water insoluble (page 995).

***Claim Rejections - 35 USC § 103***

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

21. Claim 52 is rejected under 35 U.S.C. 103 (a) as being unpatentable over Ogawa (US 5576088) in view of Kim (US 2004/0192807)

22. Regarding claim 52, Ogawa fails to disclose that the latex has a dry matter content of from 20 to 50% by weight. However, Kim discloses a resin composition comprises 40 to 70 wt% of at least one selected from polyurethanes and 3 to 20wt% of silica (abstract). Kim discloses that the resin composition such as polyurethane with a solid content (dry matter content) from 20 to 50% (para 0012). The motivation for using latex such as polyurethane in a solid content from 20 to 50% by weight is If the

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solid content is below 20%, the viscosity of the composition is decreased, and thus, it is difficult to form a coat. If the solid content is above 50%, the viscosity is increased and partial coagulation of the resin solution occurs (para 0015).

23. In light of the motivation of using the latex such as polyurethane with a solid content from 20 to 50 wt% as taught by Kim as discloses above, it therefore would have been obvious to one of ordinary skill in the art at the time of invention to use the latex particle with a solid content from 20 to 50 wt% of Kim in the coating composition of Ogawa to maintain the viscosity of the composition and to avoid partial coagulation of the composition.

24. Claim 54 is rejected under 35 U.S.C. 103 (a) as being unpatentable over Ogawa (US 5576088) in view of Kim (US 2004/0192807) and Tomotake et al. (US 2003/0169320).

25. Regarding claim 54, Ogawa discloses that the latex has a particle size less than 100nm; however, Ogawa fails to disclose particle size of the latex and that the initial latex is polyurethane type latex. Although Ogawa discloses that the latex is 100 nm or less, there is no explicit disclosure that 95% by weight of the particles can be less than 15nm. Tomotake discloses an ink containing a colored articles comprising a colorant and a resin (abstract) and also discloses that the average particle size of the latex polymer particles used in the ink is preferably from 10 to 100 nm (para 0131). Tomotake further discloses that if the average particle size is too large (exceeds 300 nm), glossiness is degraded and if the average particle size is too small (less than 10 microns), water or abrasion resistance is degraded (para 0131). Kim discloses a resin

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composition comprises 40 to 70 wt% of at least one selected from polyurethanes and 3 to 20wt% of silica (abstract). Kim discloses that the resin composition such as polyurethane with a solid content (dry matter content) from 20 to 50% (para 0012). The motivation for using the polyurethane type latex is it has satisfactory binding property with pigments and a high affinity to aqueous ink and thus exhibit good ink absorption.

26. In light of the motivation of using the polyurethane type latex in the resin composition along with the pigment as taught by Kim and having a latex polymer particles with particle size as described above by Tomotake, it therefore would have been obvious to one of ordinary skill in the art at the time of invention to use polyurethane type latex of Kim in the gloss providing layer of ink-jet recording sheet of Ogawa to have satisfactory binding property with pigments and a high affinity to aqueous ink and thus exhibit good ink absorption and it would be obvious to one of ordinary skill in the art at the time of invention to control the size of the particles by routine experimentation and include the particles where the 95wt% of the particles have a size less than 15 nm to produce desired improved water resistance, abrasion resistance and glossiness of the images.

### **CONCLUSION**

27. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Menzel (DE 3731733) and Cheng et al. (US 2003/0215733) fails to disclose that the particles of the pigments are water insoluble.

28. Any inquiry concerning this communication or earlier communications from the examiner should be directed to RONAK PATEL whose telephone number is (571)270-

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1142. The examiner can normally be reached on Monday to Thursday 8 AM EST to 6PM EST.

29. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on 571-272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

30. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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